

REMARKS/ARGUMENTS

Claims 1-14 are pending in this application. Claim 1 has been amended. New claims 15-34 have been added. It is respectfully submitted that the amendments and new claims are supported by the application as originally filed, and that no new matter has been added. Claims 1 and 15-34 are now pending.

Objection to the Specification

The disclosure is objected to because of an informality on page 11, line 20.

As set forth above, the entire paragraph has been replaced.

Claims Rejected Under 35 U.S.C. § 112

Claim 1 is rejected under 35 U.S.C. § 112, second paragraph, for insufficient antecedent basis for a limitation of the claim.

As set forth above, claim 1 has been amended. Claim 1 no longer includes the wording indicated by the Examiner. Thus, it is respectfully requested that the rejection be withdrawn.

Claims Rejected Under 35 U.S.C. § 102

Claims 1-8 are rejected under 35 U.S.C. § 102(b) as being anticipated by DeKoning et al., U.S. Patent No. 6,073,218. Claims 9-10 and 12-14 are rejected under 35 U.S.C. § 102(b) as being anticipated by Idleman et al., U.S. Patent No. 5,140,592. These rejections are addressed separately below.

Claims 1-8 (DeKoning)

As set forth above, claim 1 has been amended, and claims 2-8 have been canceled without prejudice. Claim 1 now recites that the first controller takes over control of one of the first logical units from the first controller to the second controller by rewriting the first configuration information associated with that first logical unit. An example can be seen in FIGS. 3 and 4A-4B, and in the specification at page 13, line 8 through page 18, line 7. More specifically, in the context of an embodiment of the present invention, “take over” is performed by the source controller. See the specification at page 13, line 21 through page 14, line 5. Thus, in the context of an embodiment of the present invention, the source (first)

controller "takes" the control from the source (first) controller "over to" the destination (second) controller "by rewriting" the configuration information. In other words, when the source controller "takes over control to" the destination controller, the source controller performs giving over, handing over, or passing over the control to the second controller. It is respectfully submitted that DeKoning et al., as understood, fails to teach, indicate or suggest this feature, among others.

DeKoning et al., as understood, is directed toward a primary control module and a redundant control module that can assume the role of the primary control module if the present primary control module fails. See col. 13, lines 14-30. Thus, in DeKoning as understood, the failed primary control module cannot "take" the control over to the redundant control module since the primary control module has failed.

Furthermore, claim 1 now recites that the first controller controls a plurality of first logical units and the second controller controls a plurality of second logical units. An example can be seen in FIGS. 1, 4A-4B and 8A-8B, and in corresponding parts of the specification. More specifically, in the context of an embodiment of the present invention, control of a particular logical unit is exclusive to a particular controller. It is respectfully submitted that DeKoning et al., as understood, fails to teach, indicate or suggest this feature, among others.

DeKoning et al., as understood, is also directed toward managing and controlling the granting of temporary exclusive access of a portion of a LUN that is shared among control modules. See col. 11, lines 56-61; and col. 12, lines 5-9 and 27-40. Thus, in DeKoning as understood, a particular control module shares control of a LUN with another control module. Therefore, DeKoning as understood does not disclose that control of a particular LUN is exclusive to a particular control module.

Further, it is respectfully submitted that amended claim 1 is not obvious in view of the cited art. The present invention is directed toward each controller having an independent and dedicated cache and taking charge of respective volumes. See the specification at page 5, lines 11-18. Thus, each respective volume is associated with at most one controller. As a result, the accesses to the controllers can be equalized or balanced among the controllers to thereby realize load balancing among the controllers. See the

specification at page 17, line 28 through page 18, line 7. It is respectfully submitted that this advantage is neither hinted at nor recognized by the cited art.

Therefore, for the reasons discussed above and others, it is respectfully submitted that claim 1 is now allowable.

Claims 9-10 and 12-14 (Idleman)

As set forth above, claims 9-10 and 12-14 have been canceled without prejudice.

In addition, it is respectfully submitted that Idleman et al., as understood, also fails to teach, indicate or suggest all the features of amended claim 1. Idleman, as understood, is directed toward routing between a first level controller and an alternate second level controller upon failure of the original second level controller associated with the first level controller. See Idleman's Abstract. When a fault occurs in second level controller 14A, a physical path is changed over and control of the drive is performed by another second level controller 14B. See FIG. 5 and related portions of the specification.

In contrast to Idleman et al., amended claim 1 recites that the first controller takes over control of one of the first logical units to the second controller by rewriting the first configuration information associated with the one of the first logical units. Idleman et al., as understood, fails to disclose anything regarding taking control over to the other controller by rewriting the configuration information. See Idleman et al. at col. 10, lines 14-63.

It is noted that the Examiner has asserted that Idleman et al. at col. 15, lines 46-54 discloses that the configuration information causes the controller to load various registers to reconfigure the connections. However, it is respectfully submitted that such assertion fails to teach, indicate or suggest the features recited in amended claim 1. As set forth in amended claim 1, the first (source) controller performs the take over process by rewriting the configuration information. There is no teaching, indication or suggestion in Idleman et al., as understood, regarding which "second level controller" loads the registers. It cannot be determined from Idleman et al. whether the "second level controller" referenced in the cited section is the source controller, the destination controller, or another controller such as the primary controller or the secondary controller.

Claims Rejected Under 35 U.S.C. § 103

Claim 3 is rejected under 35 U.S.C. § 103 as being unpatentable over DeKoning et al. in view of Murotani et al., U.S. Patent No. 6,412,078. Claim 11 is rejected under 35 U.S.C. § 103 as being unpatentable over Idleman et al., U.S. Patent No. 5,140,592, in view of Obara et al., U.S. Patent No. 6,625,691.

As set forth above, claims 3 and 11 have been canceled without prejudice.

New Claims

New claims 15-34 have been added to further claim applicants' invention.

Support for claim 15 can be seen in FIG. 1 (note management console 4) and FIG. 3 (note steps 801, 802 and 803), and corresponding parts of the specification, among other places.

Support for claim 16 can be seen in FIG. 3 (note step 804) and corresponding parts of the specification, among other places.

Support for claim 17 can be seen in FIG. 1 (note management console 4) and FIG. 3 (note steps 801, 802 and 803), and corresponding parts of the specification, among other places.

Support for claim 18 can be seen in FIG. 1 (note path controller 3) and FIG. 3 (note steps 805, 806 and 807), and corresponding parts of the specification, among other places.

Support for claim 19 can be seen in FIG. 6 (note computer 2n); in the specification at page 18, line 26 through page 19, line 7; and in FIG. 7 (note steps 904, 905, 906, 907 and 908) and corresponding parts of the specification, among other places.

Support for claim 20 can be seen in FIG. 7 (note steps 901, 902, 903, 904 and 908) and corresponding parts of the specification, among other places.

Support for claims 21-27, respectively, and 28-34, respectively, is as discussed above regarding claims 15-20, respectively.

It is respectfully submitted that claims 15-20 are allowable as claims dependent from amended claim 1, which is allowable as discussed above, among other reasons. It is respectfully submitted that claims 21-27 and 28-34 are allowable for the same reasons as discussed above regarding claims 1 and 15-20, respectively, among other reasons.

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PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-752-2427.

Respectfully submitted,



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